

77, *A. interstitialis* Say.

*Rusticus*, *baltimorensis* and *interstitialis* are rather common throughout the winter. The others are rare at any time and in winter were taken

but once on the dates mentioned. All hibernate beneath logs, usually those in sandy localities. Six additional species of the genus have been taken in the county.

## FINAL NOTES ON ORGYIA.

BY HARRISON G. DYAR, NEW YORK CITY.

Since my former papers in *Psyche* on our species of *Notolophus* (formerly *Orgyia*), I have bred several of the western forms with the view of establishing their relationships. The species have been carried through several generations and I have thus had them continuously before me for three years. The following conclusions have been arrived at.

***Notolophus vetusta* Boisd.**

*gulosa* Hy. Edw.; *cana* Hy. Edw.

I recognize but one species in California. I have bred a large number of the larvae of the lupine feeding form (*vetusta*) raised from eggs kindly sent me by Mr. T. G. O. Mueller, Mr. Beverly Letcher and Dr. H. H. Behr. They do not differ from those of *N. gulosa* which I have already described and I found them by no means fastidious as to their food plants. The characters noted by the late Henry Edwards to separate them, I find to be only individual ones, present in varying degrees in different examples from broods of both *vetusta* and *gulosa*. The differences in the moths also are of the same character. I formerly stated (*Psyche*, vi, 40) that Mr. Edwards had con-

founded the moths. I see now that this was probably not the case, but that he bred from larvae on lupine the form that I bred from larvae on oak, and the contradiction was due to insufficiency of material in both Mr. Edwards' hands and my own. In the case of *cana*, I showed that there were two black tufts in the young larva, whereas *gulosa* had but one such. During my breeding of *gulosa* among numbers of larvae raised from the egg, a few appeared with the two black tufts. These were isolated and the resulting moths paired together. The larvae from their eggs the next season were all of the *cana* form. The larvae, however, from the moths from which all the *cana* forms had been eliminated varied again the next year, producing about 3 per cent *cana*. Now if we consider that all the other species of *Notolophus* have the two anterior tufts colored alike, it becomes apparent that this is a case of reversion in *gulosa* and so the greater stability of the *cana* form is accounted for. The sea-coast form, *vetustagulosa*, is thus seen to be a modified off-shoot of the more generalized one inhabiting the interior of California;

but it has not yet diverged from it in a specific degree, since a reversion may be readily obtained. The moths of *cana* were described as different from the coast form, but the only two males which I have seen are so considerably unlike and so near to *vetusta* that I do not hesitate to consider their differences as simply varietal.

**Notolophus antiqua** Linn.

*nova* Fitch; *badia* Hy. Edw.

I have bred the English form from eggs kindly sent me by Mr. J. R. Wilson. The larvae were exactly like our New York ones; but exhibited four stages for male and five for female larvae, as seems to be possible in the case of all the species of this genus. The side tufts appeared in stage iv or traces in some larvae as early as stage iii. I can thus positively confirm the identity of *antiqua* and *nova*. The moths were alike. As to the Vancouver Island *badia*, I have bred these from the eggs originally obtained there for three years. It will be remembered that *badia* is characterized by the absence of the side tufts. However, among the large number obtained, I not infrequently found traces of the side tufts or even a well developed pencil, especially in large female larvae. When present, the tufts had exactly the same characters as in normal *antiqua*, and it appears that we have in *badia* a form in which the side tufts (a lately acquired character in the genus) appear later than usual or even not at all. That is *badia* represents a more generalized condition than in the dominant

race which extends over so wide an area. That it cannot be a degenerate form, in which the tufts are disappearing, is shown by the fact that they appear only in the last stage, and most frequently in females, which have an additional stage. In a degenerate form we should expect to see the pencils, when present, appear in stage iv, as usual, and become obsolete in the later stages. I think that the fact of the actual presence of the tufts in *badia*, though not universal, together with their ready fertility with normal *antiqua*, must compel us to place *badia* as a local race of *antiqua*, though a more distinct one than in the case of the Californian species just described. The moth of *badia* often differs markedly from the *antiqua* pattern, though not constantly so.

**Notolophus leucostigma** A. & S.

*leucographa* Geyer; *intermedia* Fitch; *borealis* Fitch; *obliviosa* Hy. Edw.; *inornata* Beut.

The first four of these synonymic names refer to descriptions or figures of the moth. In *Psyche* (vi, 420, note) I referred *inornata* to this species. Mr. Beutenmüller, however, has not accepted the synonym, but states (*Journ. N. Y. ent. soc.*, ii, 30, note) that "the larva is totally distinct from the well known *leucostigma*." I have, therefore, carefully compared Mr. Beutenmüller's description with specimens of *leucostigma*. His description runs as follows: ". . . Body above mouse color, with three rows orange tubercles along each side. Each tubercle pro-

vided with a bunch of silvery gray hairs. . . . From the eighth segment to the end of the body there is a broad black stripe. . . . Underside yellowish green . . ." I have omitted parts of the description which apply equally to *leucostigma*. Now in *leucostigma* the ground color is gray or "mouse color," but the dorsal black band is edged by a wide yellow stripe. If this stripe be

absent or greatly reduced in *inornata*, as the description implies, it would give to the larva a very different appearance, "totally distinct" perhaps as Mr. Beutenmüller says; but I cannot convince myself that we have to do with more than a variety or possibly a local race of *leucostigma*. The yellow markings are variable in *vetusta* and *antiqua*.

*Synopsis of the Larvae of Notolophus.*

- Head yellow, colors in general pale . . . . . *definita*
- Head red.
  - A distinct yellow subdorsal band . . . . . *leucostigma*
  - Gray marks predominant, the yellow band not noticeable . . . . . var. *inornata*
- Head black.
  - Warts crimson, brush-like tufts dark along the crest, the yellow lines along the sides broken into spots.
    - One black tuft in young larva . . . . . *vetusta*
    - Two black tufts in young larva . . . . . var. *cana*\*
  - Warts orange, brush tufts unicolorous, yellow or white, side lines usually continuous.
    - A lateral black hair-pencil from joint 6 . . . . . *antiqua*
    - No lateral black pencil . . . . . var. *badia*\*

NOTES ON THE ACRIDIDAE OF NEW ENGLAND.—II. TRYXALINAE.—II.

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5. PSEUDOPOMALA gen. nov.

by Stål (= *Metaleptea* Brunner, Rev. p. 118), and in the absence of adequate description of structural characters and being the generic type a somewhat full description is appended.

Type: *Opomala brachyptera* Scudd. This species belongs to a genus not tabulated by Brunner in his Revision which is allied to *Truxalis* as defined

In my preliminary list I referred this

\* I regret that the rule of priority prevents giving the specific position to the more generalized form